

## **Judicial Management By Digital Libraries Semantics**



# D.6.4

## Demonstration to Polish Pilot

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# **1 Introduction**

## **1.1 Deliverable objectives**

This document describes all the demonstration activities performed during the JUMAS project focused on the Polish Pilot site.

## **1.2 Audience of the deliverable**

This deliverable is aimed at both an external and internal audience of interested users. In particular, this deliverable is targeted to all jumas consortium members and to potential end users.

## **1.3 Structure of the deliverable**

First of all, this deliverable describes the demonstration setup that was used for Polish pilot, which involves the physical configuration and collection of audio video materials. At next section the demonstration tool is presented with the detailed description of Jumas Process Configurator and Jumas Portal.

Last section is dedicated to Polish pilot demonstrations which been done during the project to the Polish audience.

## 2 Demonstration set up

### 2.1 Localization of the Polish prototype

#### Localization of the JUMAS portal

Jumas System consist of two main components Jumas Portal and Jumas Process Manager (JPM). Originally Jumas Portal was available only in English, but the final prototype was adjust to Polish pilot and all text were translated according to Polish requirements.

Therefore, the portal's local resources (resx files) and database dictionary table has been configured for the Polish language. From the end user point of view, in order to enable the Polish language, an image representing the national flag on the portal's master page has been provided. (see Fig. 1)



Fig. 1. Jumas Portal – Polish prototype

By clicking the Polish flag image-link the corresponding user-id culture (UICulture) updates the Poral Language Configuration Table presented in Figure 2.

PORTAL_LANGUAGES	
Key:	varchar(100)
Languagecode:	varchar(6)
Value:	varchar(100)

Fig. 2. Jumas portal language configuration table

All demonstrations of Polish prototype were given in Polish language and concerned Polish trials.

#### Localization of the JUMAS components

Some of the analysis modules developed for the Jumas system needed to be tuned for Polish pilot. This were basically modules that operates on text and sounds, in particular ontology, information extraction, emotion recognition, automatic speech transcription and deception detection.

## Localization of the Jumas Process Configurator (JPC)

The Jumas Process Configurator, is a standalone application that manages the execution of processes, ranging from the upload of the multimedia material on the JUMAS portal to the invocation of multimedia analysis functionalities as speech recognition, video annotation, etc... This component, designed for system administrators, has been customized for the Polish Pilot. Most important parameters are presented in the table below.

Parameter	Value
Multimedia processing library path	C:\media_lib\
Remote multimedia streaming library path	\\192.168.100.150\media_lib\
Temporary streaming path	C:\media_lib_streaming_tmp\
Data base connection	192.168.100.150; JUMAS_JPM; jumas; SIDIP
Jumas Portal address	<a href="https://jumasportal.esaprojekt.pl/">https://jumasportal.esaprojekt.pl/</a>

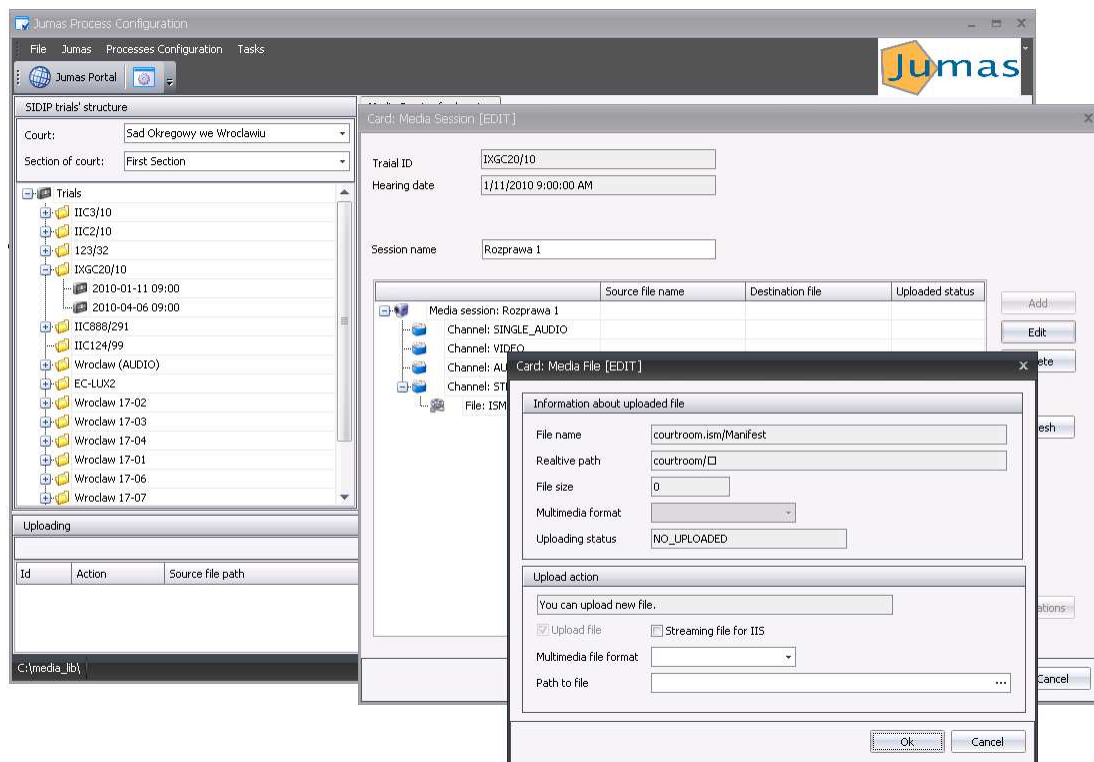
**Table 1. Jumas Process Manager configuration for Polish pilot**

## Filling up the Italian Jumas Portal

Several multimedia contents have been acquired at the Court of Wrocław and. All these contents, described in section 2.3, have been uploaded on the Polish Jumas Portal in order to demonstrate the potentiality of the developed system. The acquired audio/video material has been uploaded on the Jumas Portal by using the SIDIP and the localized Jumas Process Configurator described above.

Once the record for a given trial has been created by using the SIDIP functionalities, the corresponding folder was available into the Jumas Process Configurator. This allowed us to upload the media files and invoke the functionalities for populating the Portal with multimedia and semantic information.

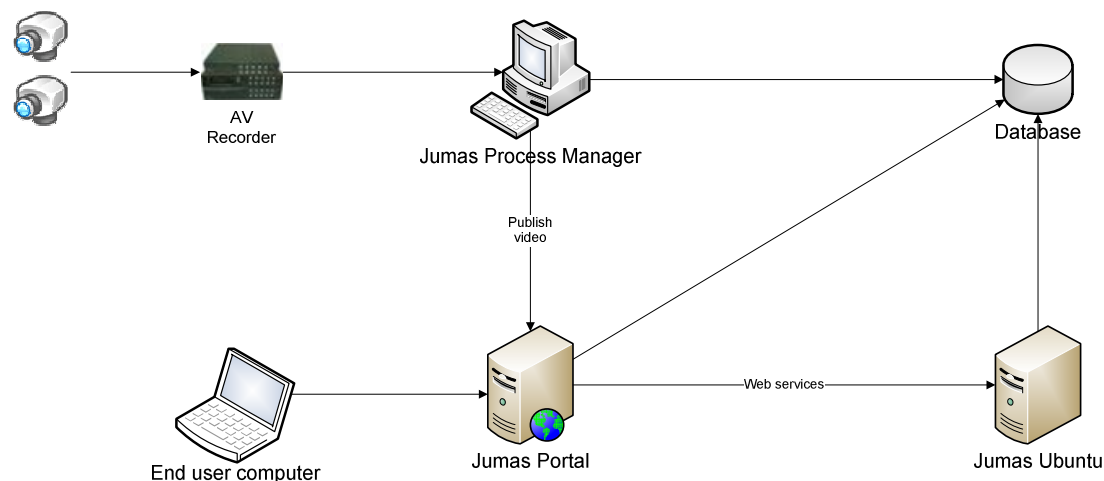
The media sessions, media channels and media files for the acquired material at the Tribunal of Wrocław have been managed with the JPC for making available the multimedia and semantic contents on the JUMAS portal for the demonstration phase. This management included the creation of media sessions, the definition of media channels and the upload of media files.



**Fig. 3. Management of media contents for filling up the Jumas Portal**

## 2.2 The physical layout

Jumas is a distributed system, which works on different platforms and operating systems. It is also integrated with existing Court Management System, which is Sidip in this case. The whole physical architecture is presented on the figure below.



**Fig. 4. Jumas hardware configuration**

The Jumas end user has access to the system through Jumas Portal which is deployed on VM-Jumas-Portal virtual machine. He also has access to Sidip system (deployed on the same VM) where trials and hearings can be managed. All multimedia stored in Jumas system are kept in Media Library on the Jumas

Process Manager machine. The processes are run also on this VM. Jumas Ubuntu is a linux server where web services are deployed.

The following configuration has been adopted in order to deliver the JUMAS demonstrator for the Polish Pilot.

VM	Description
<b>Jumas Portal</b>	<i>Virtual Machine</i> Name: VM-Jumas-Portal Operating System: Microsoft Windows Server 2008 Firewall: windows firewall Services provided and corresponding ports: <ul style="list-style-type: none"> <li>• Application Server (Jboss): 80</li> <li>• Internet Information Services (IIS): 80</li> <li>• Internet Information Services (IIS): 443</li> <li>• Remote Desktop (RD): 3389</li> <li>• Oracle DB</li> </ul> Expected network traffic: between 50 MB/Day and 20 GB/Day according to the courtroom activity
<b>Jumas Process Manager</b>	<i>Virtual Machine</i> Name: VM-Jumas-XP Operating System: Microsoft Windows XP Professional Firewall: windows firewall Services provided and corresponding ports: <ul style="list-style-type: none"> <li>• Application Server (Jboss): 80</li> <li>• Internet Information Services (IIS): 80</li> <li>• Internet Information Services (IIS): 443</li> <li>• Remote Desktop (RD): 3389</li> <li>• Oracle DB</li> </ul> Expected network traffic: between 50 MB/Day and 20 GB/Day according to the courtroom size and activity
<b>Jumas Ubuntu</b>	<i>Virtual Machine</i> Name: VM-Jumas-Ubuntu Operating System: Ubuntu Firewall: - Services provided and corresponding ports: <ul style="list-style-type: none"> <li>• Application Server (Jboss): 1547</li> <li>• File Transfer Service (FTP): 5521</li> <li>• Secure Shell (SSH): 5522</li> <li>• Remote software control (VNC): 6346</li> </ul> Expected network traffic: between 50 MB/Day and 20 GB/Day according to the courtroom activity

**Table 2. Virtual Machines Description**

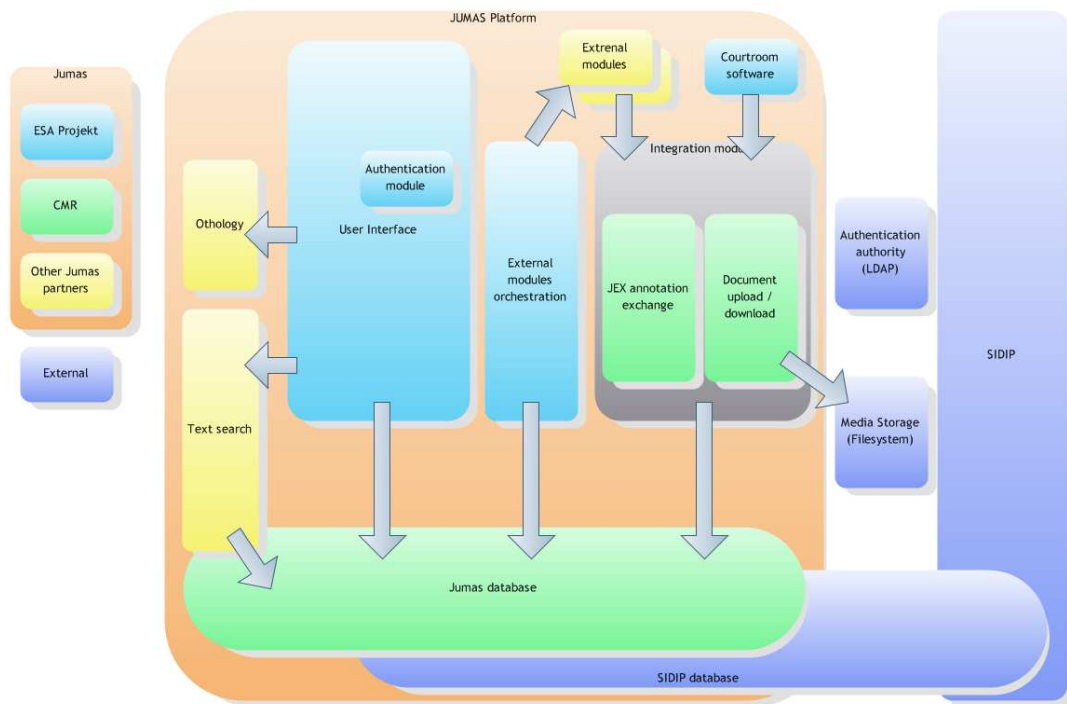
## JUMAS-SIDIP integration and security constraints

The Jumas system has been designed in order to cooperate with any Court Management System (CMS). In particular integration with SIDIP system was implemented. The Jumas system shares the physical database with it: same schema and same instance. The integration with SIDIP has been done at the database level: the entities of the Jumas database which concern CMS data have been substituted with database views on SIDIP schema. In this way, changes performed in SIDIP are immediately available to JUMAS.

The authentication for the JUMAS portal is performed by using the User Interface available on the Jumas Portal instead of using the LDAP application protocol provided by SIDIP. A pluggable component behind the User Interface abstracts the authentication from LDAP. Note that all authorization information are stored in the database.

The JUMAS-SIDIP integration is depicted in Fig. 5.





**Fig. 5. JUMAS-SIDIP integration**

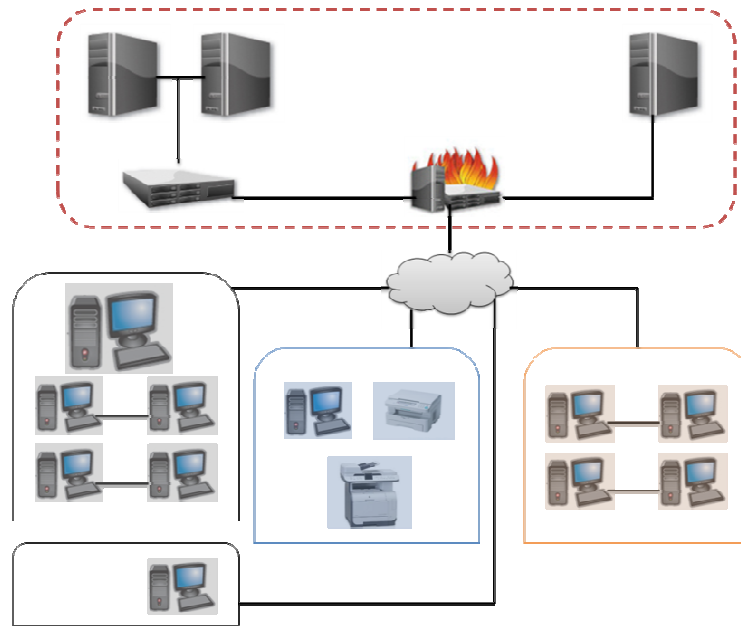
### Scalability hypothesis

Hypotheses of court infrastructure for future JUMAS installation can be defined according to the Court dimension.

Considering that, in a single courtroom is 6 hours of hearings per day and all hearings need to be recorded with a single video channel (640x480 resolution and 24 fps) and 4 audio channels (16 kHz, 192 kbps and 32 bit) it is about 16 GB per day per courtroom.

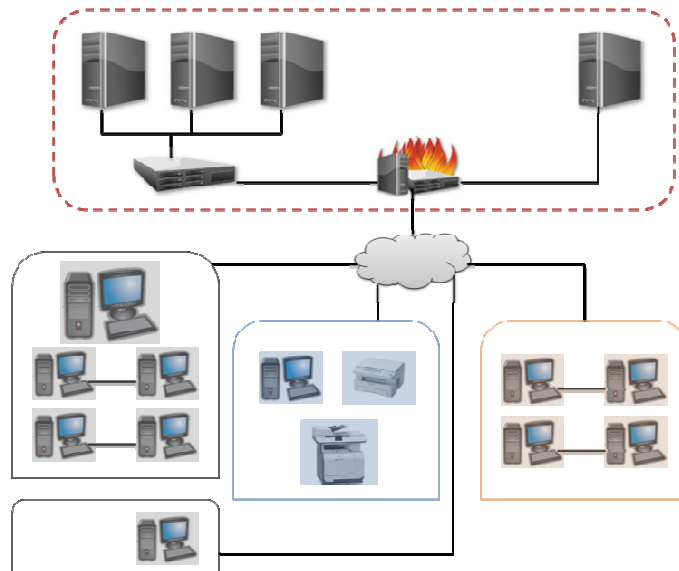
A scalability hypothesis is described as follows:

- *Small Courts.* A law court of small dimension (1-5 courtrooms) requires a total amount of space of 3,2 - 16 TB, per year.
  - Vertical scalability:
    - o Data Base: 2-3 CPU at 3,2 GHz, RAM 4 to 32 GB
    - o Audio Server: 2 CPU at 3,2 GHz, RAM 4 to 8 GB
    - o Video Server: 2 CPU at 3,2 GHz, RAM 2 to 8 GB



**Fig. 6. Infrastructure hypothesis for small courts**

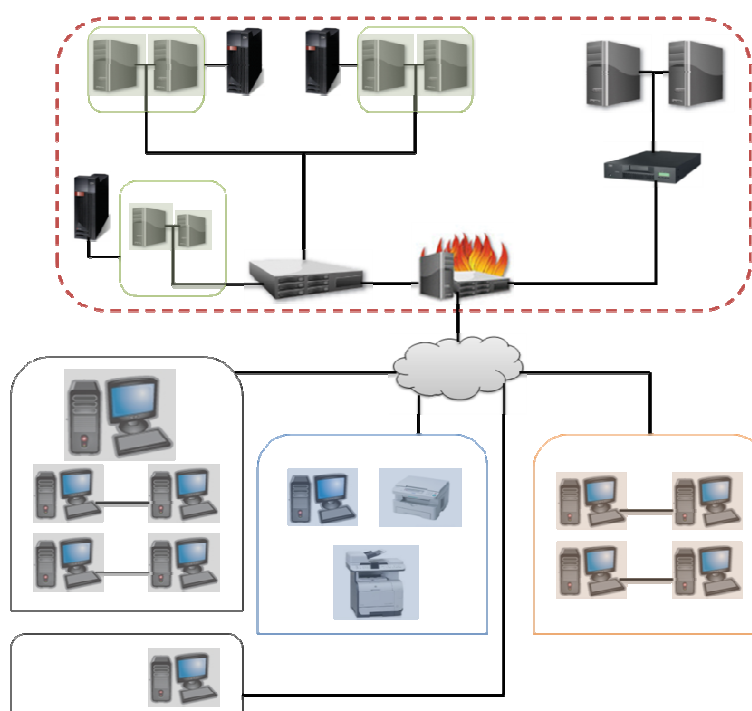
- *Medium Courts.* Considering a medium law court of about 10 courtrooms. The total requested data amount is 32 TB per year.
  - Vertical scalability:
    - Data Base: 3 to 4 CPU at 3,2 GHz, RAM 8 to 32 GB
    - AS: 2 to 8 nodes, 1 to 2 CPU at 3.2 GHz, RAM 4 to 8 GB
    - VS: 2 to 8 nodes, 1 to 2 CPU at 3.2 GHz, RAM 2.5 to 8 GB



**Fig. 7. Infrastructure hypothesis for medium courts**

- *Large Courts.* Consider a large/metropolitan law court dimension with about 30 courtrooms. The total requested data amount is 100 TB per year.
  - Vertical scalability:
    - DB cluster: 4 to 10 nodes, 3 to 4 CPU at 3,2 GHz, RAM 8 to 32 GB
    - AS-Infra cluster: 4 to 10 nodes, 2 to 4 CPU at 3,2 GHz, RAM 8 to 12 GB
    - AS-MT: 4 to 10 nodes, 2 to 4 CPU at 3,2 GHz, RAM 3 to 12 GB

- VS: 4 to 10 nodes, 2 to 4 CPU at 3,2 GHz, RAM 3 to 12 GB



**Fig. 8. Infrastructure hypothesis for large courts**

### Setting up the courtroom infrastructure for audio-video acquisition

Table below presents the equipment used for trial recording done in Jumas Projet.

Name	Type	Manufacturer	Number
Touch screen	TPMC-8T	Crestron	1
Driver	CP2E	Crestron	1
RS-232/422 Module	STI-COM	Crestron	2
DVD/HDD Recorder	SR-DVM700	JVS	1
DVD Player	DVD-S511	Panasonic	1
Microphone	MX418D/C	Shure	4
Microphone	MX418/C	Shure	1
Microphone	MX418E/C	Shure	3
Audio mixer	PRO RX1202FX	Behringer	1
Rack	-	Microtech	1
Camera	EVI-D70P	SONY	2
Plasma screen	TH-42PS10	Panasonic	2
Videoterminal	PCS-G70	SONY	1

**Table 3. courtroom infrastructure for audio-video acquisition**

### 2.3 Collection of audio-video material

During the project several recording sessions was done.

1. Court of Wroclaw – 12.03.2010  
4 real trials was recorded. Duration of trials lasted from 20 minutes to 2 hours.
2. Court of Wroclaw – 15.06.2010  
1 demo trial was recorded. This trial lasted about one hour.

3. Court of Krakow – 23.06.2010  
1 demo trial was recorded. It was a demo trial presented to the audience of all presidents of polish District Courts. It lasted 30 minutes.

In the last part of project Court of Wroclaw has also make available about 10 recordings done in Verbateam project. All of this hearings lasted less than one hour.

All recordings were uploaded and processed by jumas system and are available through the jumas Portal.

### 3 Demonstration tools

#### 3.1 JUMAS portal: user manual for law professionals

Jumas Portal is a web application that allows user to search and browse trials and documents related to them, and to watch audio and video content with text annotations related to the recordings. Jumas portal provides the metaerials as AV stream. The latest versions of Polish pilot of Jumas Portal is available at the following address

Polish pilot <https://jumasportal.esaprojekt.pl/>

This version is related to Polish trials however it is available in three language versions: Polish, English and Italian.

#### Login

The first thing user should do to get access to Jumas Portal is to log in. There is a preset user account that has access to limited number of trials made for presentation purpose. To log in please provide following data:

Polish pilot	
Login:	*****
Password:	*****

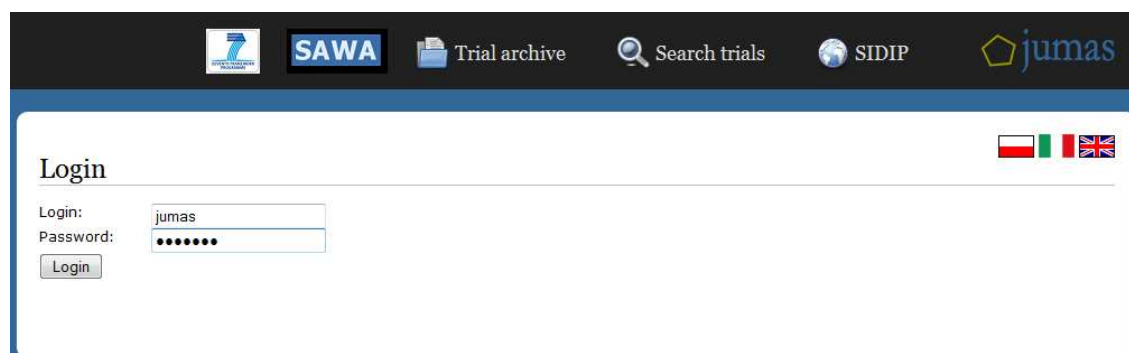


Fig. 9. Login page

## Trial Archive

After the user is logged in the trial archive is presented. User can browse only trials that he is authorised to. User is able to filter list of the trials by name or description.



**Fig. 10. Trial archive**

To get the detailed information about particular trial user should click on the chosen item on presented list.

## Trial Details

The Trial Details page presents most important information related to the selected trial. The page is divided into two tabs. The first one presents information retrieved from CMS system. The second one is related to one of Jumas system modules – Multimedia Summarization.

### Details

This tab shows trial main data such as court name, section, the trial matter, some short description, and list of people involved in this trial.

The screenshot displays the 'Trial details' page of the SAWA system. At the top, there is a navigation bar with logos for SAWA, Trial archive, Search trials, SIDIP, and jumas. Below the navigation bar, the page title 'Trial details' is shown with a folder icon. The page is divided into two tabs: 'Details' (selected) and 'Storyboard'. The 'Details' tab contains a table of trial information:

Court:	<b>Sąd Okręgowy we Wrocławiu</b>	Judge:	<b>Grzegorz Karaś</b>
N.R.G.:	<b>IIC3/10</b>	Prosecutor:	<b>Waldemar Adamski</b>
Section:	<b>First Section</b>	Clerk:	<b>Wacław Norud</b>
Matter:	<b>kraków konferencja</b>	Lawyer:	
Description:	<b>Rozprawa demonstracyjna Kraków</b>	Accused:	<b>Ewa Michalska</b>
		First hearing date:	<b>6/25/2010</b>

Below the table, there is a section titled 'Trial : IIC3/10 - Rozprawa demonstracyjna Kraków' which contains a list of documents related to the trial:

- Hearings
- Acts pre-hearing
  - Decree ordering the trial
  - Following acts by Gip / Gup
  - Word list
- Appointments Revocation Disclaimers Defenders
- Production outside the hearing







**Fig. 11. Trial details**

At the bottom of this tab a trial folder is presented. It contains a list of hearings and a list of documents related to the selected trial.


### **Storyboard**




The storyboard presents the two lists of movies. The first one – “Summarization” – is a result of the Multimedia Summarization module. The second one – “User annotated” – is a list of user annotations with corresponding part of a movie. On the top of storyboard there is Online Summarization section. In this section user can enter a query and generate multimedia summarization in a real time for this query.

To watch any of listed movie parts user has to click it. The movie will start from the moment in time when the related annotation was assigned.



 Trial archive
  Search trials
  SIDIP
 

Logged in as Jumas User [Logout](#)


 Trial details
 

Quick Start   


Details **Storyboard**

Online summarization


Summarization



[Info: Rozprawa 17-01 \[manual\]](#)  
[Time: 00:00-00:00](#)




[Info: Rozprawa 17-01 \[manual\]](#)  
[Time: 00:00-00:20](#)




[Info: Rozprawa 17-01 \[auto\]](#)  
[Time: 01:40-01:48](#)


User annotated




[Info: Rozprawa 17-01 \[auto\]](#)  
[Time: 00:10-00:23](#)  
[Text: postanowienie o umorzeniu postępowania](#)




[Info: Rozprawa 17-01 \[manual\]](#)  
[Time: 00:10-00:23](#)  
[Text: postanowienie o umorzeniu postępowania](#)




[Info: Rozprawa 17-01 \[auto\]](#)  
[Time: 00:23-03:20](#)  
[Text: ustne motyw](#)



[Info: Rozprawa 17-01 \[manual\]](#)  
[Time: 00:23-03:20](#)  
[Text: ustne motyw](#)



[Info: Rozprawa 17-01 \[auto\]](#)  
[Time: 03:20-03:23](#)  
[Text: zakończenie](#)



[Info: Rozprawa 17-01 \[manual\]](#)  
[Time: 03:20-03:23](#)  
[Text: zakończenie](#)

Fig. 12. Storyboard

## Hearing movie

Browsing hearings on the “Trial details” page user can choose a hearing movie. Audio-video streaming page will be displayed.

Trial archive
 Search trials
 SIDIP

Trial IXGC20/10

Trial: IXGC20/10, Hearing date: 1/11/2010

Emotional state  
  
 Gesture

Related videos User annotations

Info: Rozprawa 2

Subtitles Video annotations User annotations

00:00:05 dzień dobry proszę zająć miejsca

00:00:15 dobrze proszę państwa wszystkie tak chciał przynieść państwo żeby rozprawa odbyła się ma dybała jest państwo możecie wyrazić zgodę albo nie uprzedzam więc nie jakie zdolnej sąsę tezy doзору badawcza uderzenia będzie wykorzystywane zarzut nie będziemy występować w telewizji ćwiczyć

00:00:38 rozumiem że pańscy rodacy zgodne otwieram posiedzenie na rozprawie dziesięć pięć dwadzieścia przez dziesięć z pustą syndyka masy upadłości agro landis przeciw student spółka za o stawili się zastano powodował

00:00:55 prace oceniane zapracowała kajaki syndyk masy upadłości spółki ja granic jan danuta białecka tak a może po jest żeby prosili panowie żeby korzystać z mikrofonów dobrze w trakcie zabierania głosu

00:01:13 dobrze i zostaną pozwana

00:01:16 hanna zaraz denerwuje się dobrze by żeby stać widziałem gdzieś głosów nr zaraz pełnomocnikom stron to jakie stanowisko a przez to proszę bytowe sąd

☒ Autoscroll

Fig. 13. Hearing movie

### Movie

User can play, pause and scroll through the presented movie. To control the audio-video material a typical user interface is used. While movie is being played the the results of emotional state and gestures recognitions are presented on the screen.

Emotional state  
  
 NEUTRAL

Gesture  
 HAND\_MOTION

Fig. 14. Play movie control

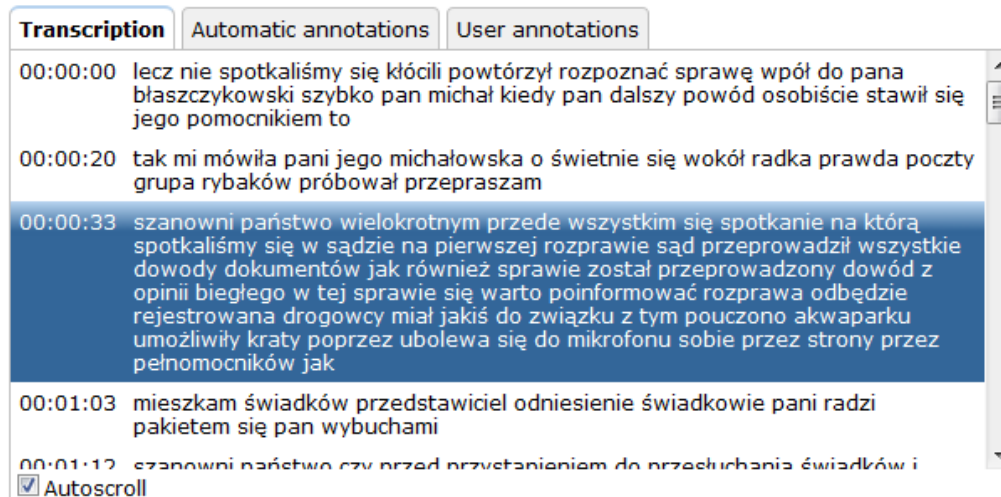
### Annotations

At the bottom of page a list of annotations is presented. The annotations are divided into three groups. First one, "Transcription", is a result of Automatic



Speech Recognition module. The second one is “Automatic annotations” which presents all annotations made by analytical modules. The third group presents annotations manually added by user.

Clicking on each annotation moves a movie to the related time period.

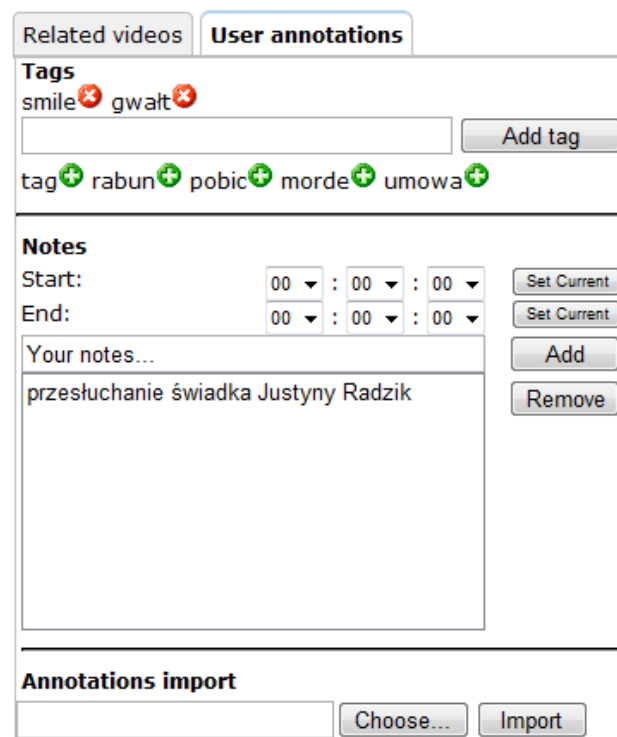


**Fig. 15. Annotations**

When a deception is detected then transcription is highlighted in different colour.

### *User Generated Annotations*

On the right site of the page a user annotation control is presented. It allows user to add his own annotations to the presented movie.

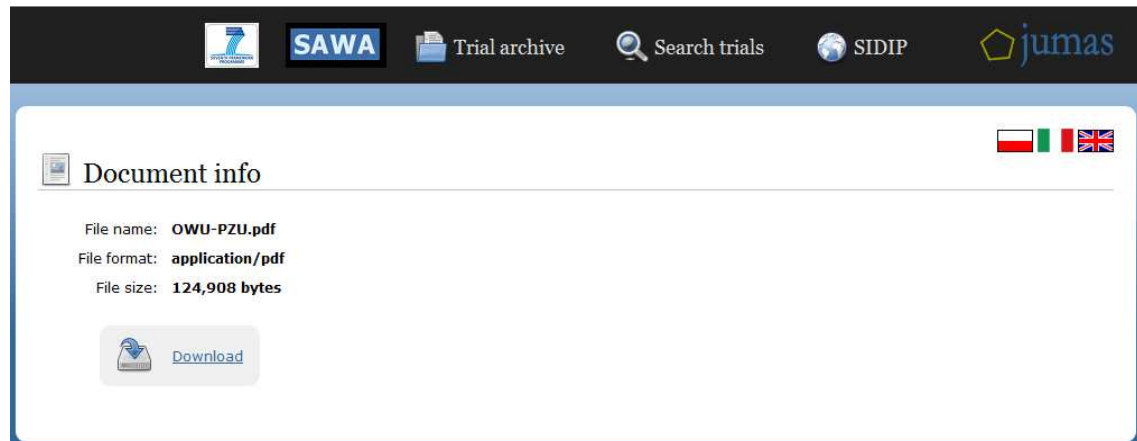


**Fig. 16. User annotations control**

A user can set annotation start and end time using Set Current buttons. User annotation can be also imported from a text file.

## Document download

While browsing trial folders on the trial details page user can choose a document to download. A download document page will be displayed with some basic document information.

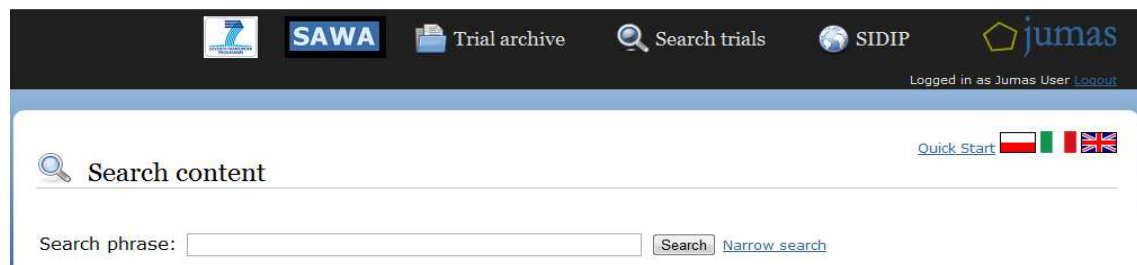


**Fig. 17. Document download**

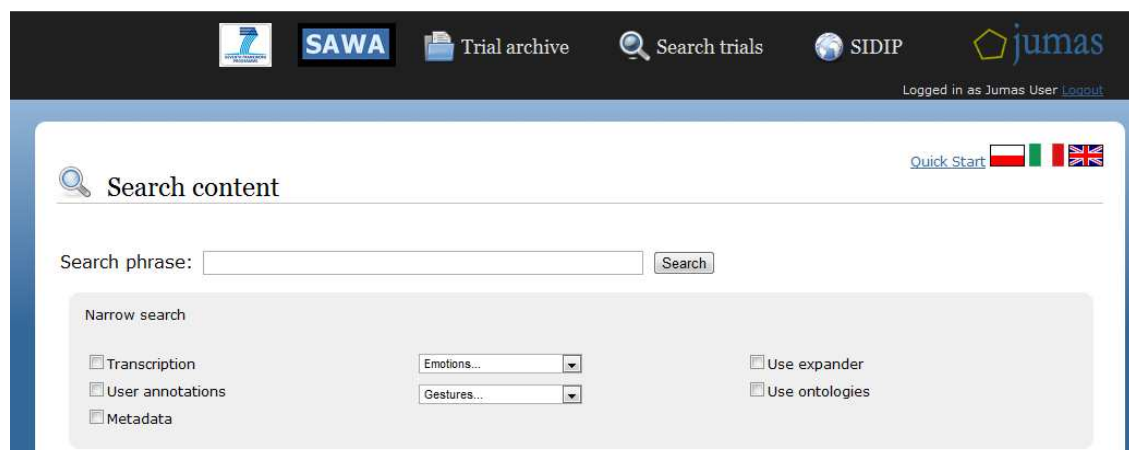
To get this document user should click on download button.

## Search Trials

Search trials page enables user to easily find trials and documents he is looking for. User should provide a search phrase and optionally choose some narrow search options.



**Fig. 18. Search trias**



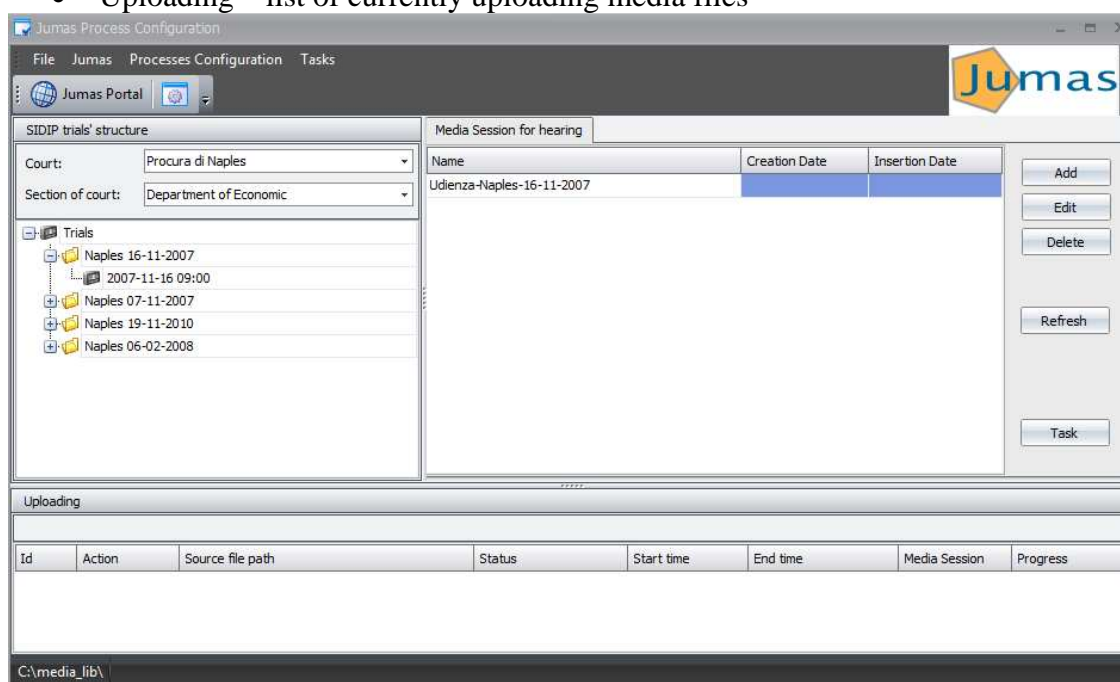
**Fig. 11. Search trials – Narrow search**

## 3.2 JUMAS Process Manager: user manual for system administrators

### Main Window

Main window is divided on to three panels:

- SISIP trials – SIDIP trials' structure
- Media Sessions – Media sessions for selected hearings
- Uploading – list of currently uploading media files



### JPC configuration

Under *Main menu\Jumas\Options* you can find option window with 3 tabs: *JPM configuration*, *Database connection*, *Jumas portal*.

#### JPM configuration tab

On the *JPM configuration* tab you can set destination directory for uploaded media files (*Path for multimedia library folder*).

If *Use path for IIS streaming* option is checked then video files prepared for IIS streaming are uploaded to directory specified in *Path for IIS streaming*, otherwise are uploaded to directory specified in *Path for multimedia library folder*.

If *Use temporary directory option* is checked then results of video encoding for IIS streaming are stored in a directory specified in *Path for temporary directory for streaming*. When encoding is completed they are moved to destination directory.

The screenshot shows the 'Options' dialog box with the 'JPM Configuration' tab selected. It contains the following fields and options:

- Path for multimedia library folder:** C:\media\_lib\
- ☒ Use path for II streaming
- Path for IIS streaming:** C:\media\_lib\
- ☒ Use temporary directory
- Path for temporary directory for streaming:** C:\media\_lib\_streaming\_tmp\
- JPMUId:** ab5e9365-9a7b-45f2-b8f1-749caedb13c4

Buttons: Ok, Cancel

### Database connection tab

In the *Database connection* tab you can specify database connection string parameters.

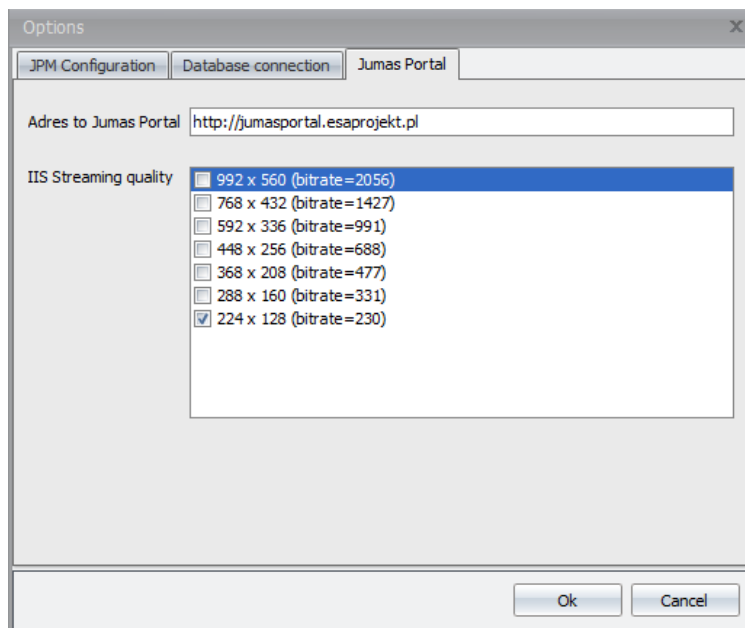
The screenshot shows the 'Options' dialog box with the 'Database connection' tab selected. It contains the following fields:

- User name:** JUMAS\_JPM
- Password:** \*\*\*\*\*
- DB Name:** SIDIP
- DB Server:** 192.168.100.150

Buttons: Ok, Cancel

### Jumas Portal tab

Jumas Portal tab – here you can change video streaming quality.



## Process configuration

Under Main menu\Process configuration there are two options: *Jumas Processes* and *Work groups od Jumas processes*.

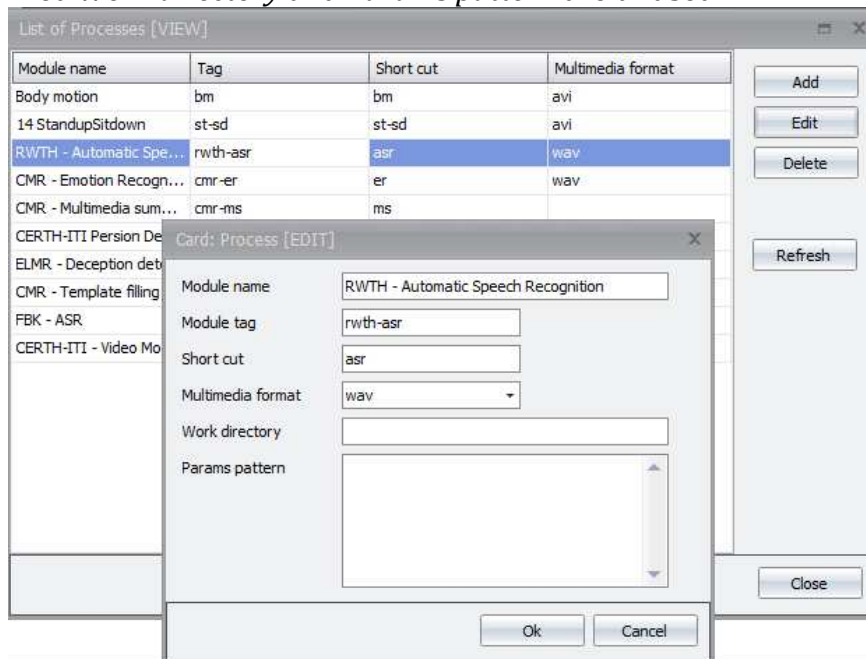
### Jumas Processes

In this option user can configure a list of processes (ASR, Emotion Recognition etc.) responsible for analyzing media files and generating annotations.

To add new process user have to specify at last:

- *Module name* – name of the process
- *Module tag* – short name of the process
- *Multimedia format* – input file format for the module.

Filed *Work directory* and *Params pattern* are unused.



## Work groups

Use this option to configure which Jumas Process works on which computer.

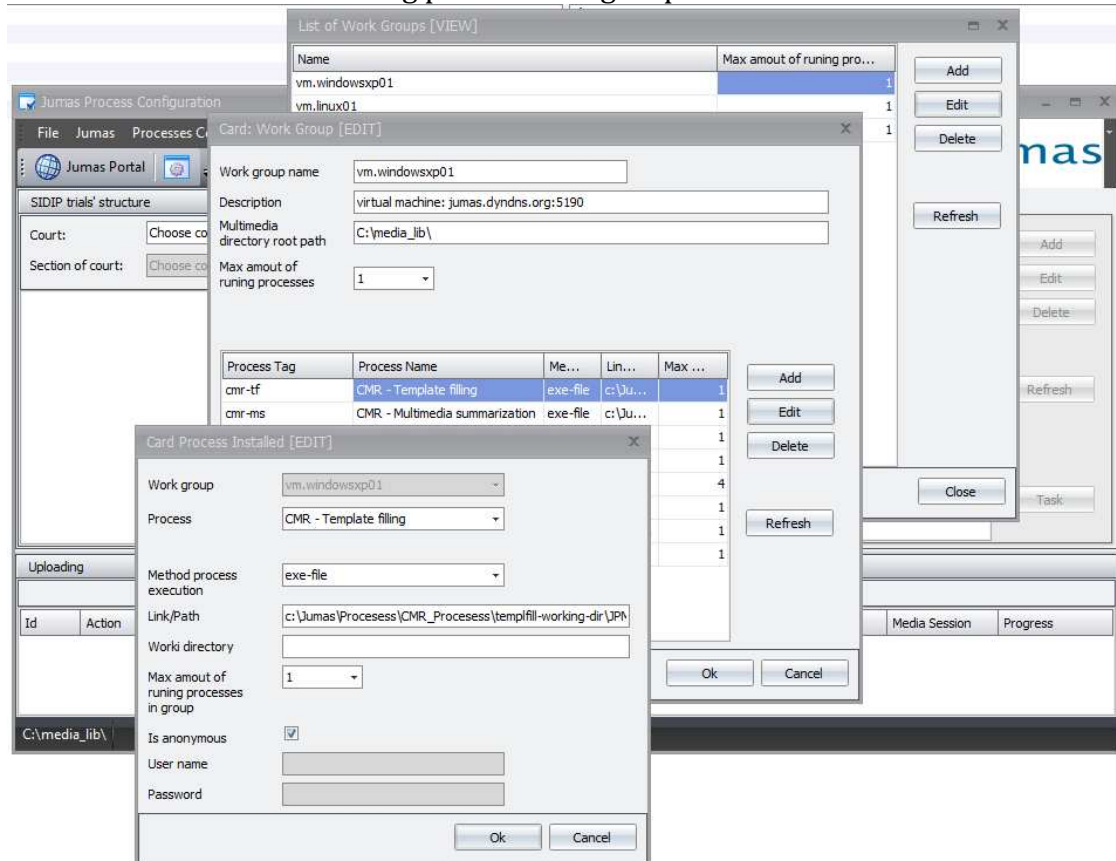
Work group means a computer/os system where the Process is installed.

To add Work group you have to specify at last:

- Work group name
- Multimedia directory root path – directory in which the process can find media files to be processed
- Max amount of running processes – maximum number of processes which can be simultaneously executed in the work group.

To add Process for a work group you have to specify at last:

- Method process execution – choose one of: exe-file, http-post
- Link/Path – address of the web service if http-post method were specified or path to the executable file (exe-file method).
- Max amount of running processes in group



## Media Sessions

To associate media files with the given trial new Media session has to be created. For the Media session you should define media channels. We can distinguish three main types of channels:

- SINGLE\_AUDIO – create this channel to upload audio file for a trial.
- AUDIO\_VIDEO – create this channel to upload video (audio-video) file
- STREAMING – create this channel to prepare streaming for Jumas Portal

One media channel can contain only one file in specific format or multiple files each in different format.

Card: Media Session [EDIT]

Trial ID: Naples 16-11-2007

Hearing date: 2007-11-16 09:00:00

Session name: Udienza-Naples-16-11-2007

	Source file name	Destination file	Uploaded status
Media session: Udienza-Naples-...			
Channel: AUDIO_VIDEO [1]			
File: avi	Naples_2007_11_16.avi	Naples_2007_11_16.avi	UPLOADED
Channel: SINGLE_AUDIO [1]			
File: wav	Naples_2007_11_16.wav	Naples_2007_11_16.wav	UPLOADED
Channel: STREAMING [1]			
File: ism	Naples_2007_11_16.wmv	Naples_2007_11_16.ism\...	UPLOADED

Buttons: Add, Edit, Delete, Refresh, Annotations, Ok, Cancel

To create streaming for Jumas Portal *Streaming file for IIS* option needs to be selected.

Card: Media File [NEW]

Information about uploaded file

File name:

Relative path:

File size:

Multimedia format:

Uploading status: NO\_UPLOADED

Upload action

You can upload new file.

☒ Upload file ☒ Streaming file for IIS

Multimedia file format: ism

Path to file: ...

Buttons: Ok, Cancel

## Taks

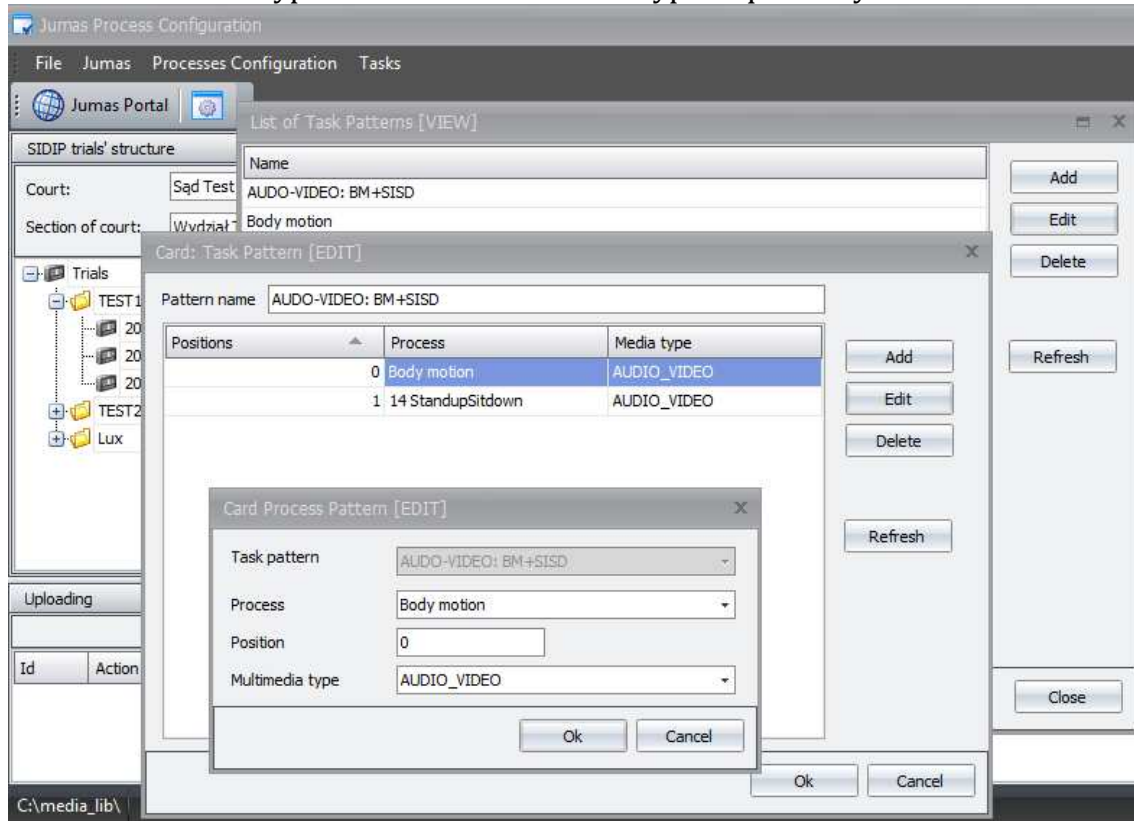
Under *Main menu* \ *Tasks* you can find two options: Task Patterns and Tasks.

### Task Patterns

In a *Task pattern* option we can configure a list of Jumas Processes that will be executed for media sessions. Task pattern can be used to create Task for a particular media session (see next chapter).

To add new Jumas Process to the task pattern you have to specify:

- Jumas Process
- Position - determines the order of execution of the process in the task. If two processes have the same position it is mean that can be executed simultaneously
- Multimedia type – refers to the channel type required by the Process

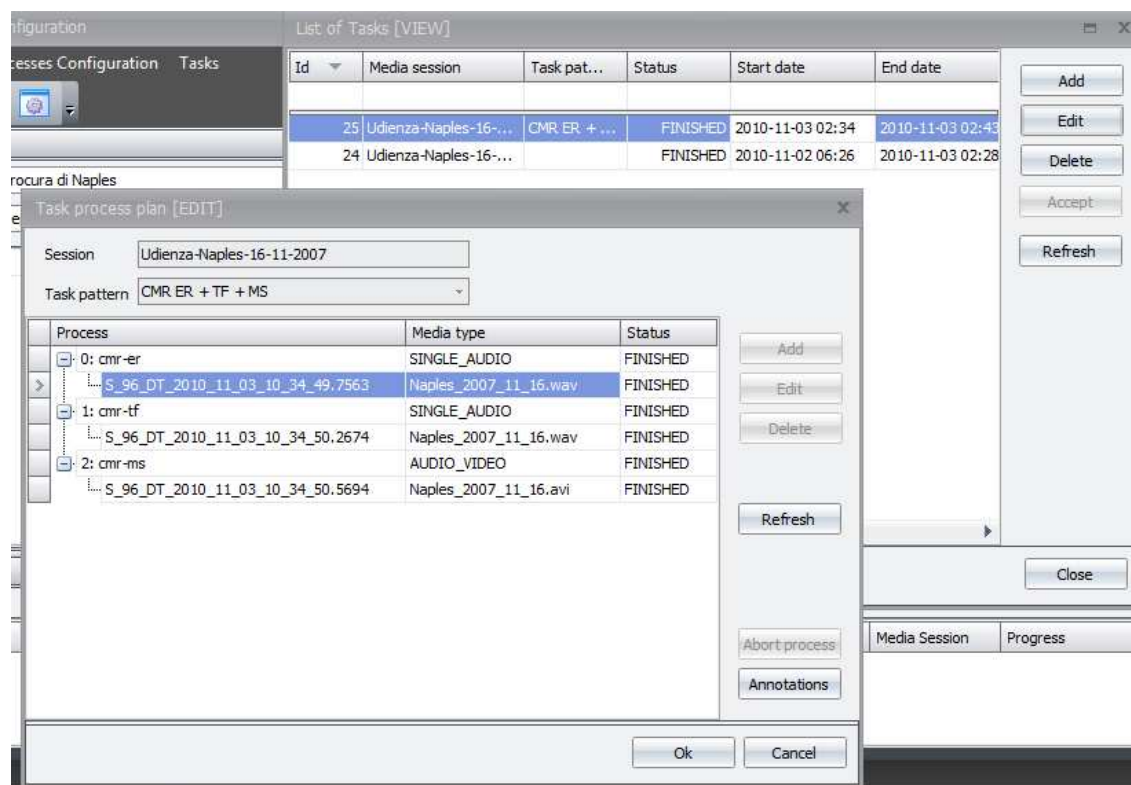


## Tasks

To run Jumas Process for the given Media session following steps have be performed:

1. Create an empty task - *Task* button in the *Media session* panel (JPC - main window)
2. Define Jumas Processes to be executed – there are two ways to do it:
  - a. Choose previously created task pattern
  - b. Add processes manually - the same way as when creating task pattern
3. Accept task – select created task in *List of tasks* window and press *Accept* button. New productionTokens will be generated and processes will be queued for execution.
4. Check if JumasProcessExecutor service (windows service) is running





## 4 Demonstration activities

### 4.1 Polish Pilot Demonstration

The final year of JUMAS project was when Polish Parliament changed the legislations of trial procedure in civil courts. It has a critical influence to the interest of Polish Ministry of Justice (PMJ), lawyers, prosecutors and private companies offering software and hardware solutions to the judicial sector. For that reason from the very first days of first prototype its Polish demonstration phase started. The system was installed on servers located in ESAPROJEKT promises and provided (<https://JUMASportal.esaprojekt.pl/>) to the potential end users with proper access privileges.

System was fed with audio-video recordings performed in court of Wroclaw and demo trials recorded in Krakow. In the end of year 2010 there was a PMJ internal project – Verbateam that was run also in Wroclaw. During that project a nice set of recordings was performed, all of them were uploaded to JUMAS portal in audio and audio-video format. For each of Verbateam recording not only automatic speech recognition was done, but also manual transcription in cooperation with portal <http://przepisywanie.pl/> <<http://przepisywanie.pl/>>. Accept the continuous demonstration of the portal on the web and group of individual meetings of consortium representatives with the end users, there were organized a couple of official events with judicial sector.

#### **4.1.1 Meeting with PMJ in Wroclaw**

The meeting was organized on 1st and 15th of June 2010 in Court of Wroclaw (CoW). The meeting was organized by President of CoW with participation of Vice Minister of PMJ, Director of Polish courts in PMJ and Chief of IT department of PMJ.

JUMAS project was presented to the audience. After the presentation, a long discussion about JUMAS project and portal took a place. Not only the research and development aspects of the projects were mentioned, but also a possible commercial usage of the system was discussed as well.

During this demonstration, a teleconference with people from company MCX was organized. MCX company equipped in the past some of Polish courts with teleconference equipment. Possibility of usage of the hardware as the source of audio-video signal was discussed. The recordings performed with this equipment are available on JUMAS portal.

#### **4.1.2 Conference in Krakow**

The meeting was organized on 11th of June 2010 in Krakow during a PMJ conference dedicated to electronic protocol and changes in Polish regulations.

All presidents of Polish courts were invited to the conference and the Minister of PMJ was also a participant of the conference. The total number of the participants was more than 100.

One of the main events of the conference it was a demo trial organized by people from CoW, ESAPROJEKT and NextiraOne (this company provided audio-video hardware for the presentation). The recordings from this demo trial are available on JUMAS portal. The presentation was very welcomed by the audience and very good opinions about JUMAS portal were spoken.

SIDIP was also presented on the conference as an example of the court management system used in Italy.

#### **4.1.3 Seminary in Wroclaw**

The meeting was organized during a seminary "Praktyczne problemy transkrypcji e-protokołu" (Eng. "Practical problems of e-protocol transcription") on 11th of December 2010 in Wroclaw. The total number of participant was about 30.

Representatives of PMJ, including vice minister, judges and IT personnel of court of Wroclaw took part of in the seminary. There were also representatives of private companies interested in Polish judicial sector (i.e. NextiraOne, Unikkon, przepisywanie.pl).

JUMAS portal was presented to the participants during the open session and it was one of the topics of discussion during formal and informal meetings of the seminary. ESAPROJEKT and CoW collected all the feedback of the participants. Some of the suggestions were immediately implemented into the system.

### **4.2 Jumas Questionnaire**

#### **SECTION 1: Questions about the overall jumás system**

**1) Information quality for retrieval and consultation purposes:**

	High	Medium	Low
1.1 Automatic Transcription		2	19
1.2 Video annotation		2	19
1.3 Emotion Annotation		2	19
1.4 Deception Detection	1	1	19
1.5 Multimedia Summarization	1	2	18
1.6 Template Filling Items	2	2	17
1.7 User Generated annotations	21		

**2) The JUMAS System is useful for...**

	High	Medium	Low
2.1 Training people	21		
2.2 Sharing information	21		
2.3 Reducing the time/costs between the recording and the availability of the transcriptions	17	4	
2.4 Reducing the time for the retrieval process	21	0	
2.5 Enhancing the consultation process	17	3	1
2.6 Supporting your decision process	21		
2.7 Managing the "backoffice" of the proceedings (process manager)	15	5	1
2.8 Accessing information everywhere	21		
2.9 Completeness of information available	16	5	0

**3) What will be the impact on your daily job if you will use JUMAS ?**

☐ High ☐ Medium ☐ Low

H-17 M-4

**4) What is your global satisfaction?**

☐ High ☐ Medium ☐ Low

H-17 M-4

If moderately or unsatisfied, what didn't meet your need or expectation?

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Automated transcription- 6

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**5) Which semantic annotations and functionalities do you think are really useful for your job?**

	High	Medium	Low
5.1 Automatic Transcription	21		
5.2 Video annotation		15	6
5.3 Emotion Annotation		6	15
5.4 Deception Detection		6	15
5.5 Multimedia Summarization		14	7
5.6 Template Filling	18	3	
5.7 Information Retrieval	21		
5.8 User Generated annotations	21		
5.9 Process Manager	21		
5.10 Web Portal	21		

**6) Which functionalities would you like to improve?**

	High	Medium	Low
6.1 Automatic Transcription	21		
6.2 Video annotation			21
6.3 Emotion Annotation			21
6.4 Deception Detection			21
6.5 Multimedia Summarization			21
6.6 Template Filling	21		
6.7 Information Retrieval	21		
6.8 User Generated annotations	21		
6.9 Process Manager	21		
6.10 Web Portal	21		

**7) Do you think that JUMAS could be useful for the investigative/pre-trial phase?**

☐ Yes ☐ No

Y- 19 N-2

**8) Web Portal Usability**

	Strongly Agree				Strongly Disagree
I think I would like to use this web site frequently	17	2	1	1	
I found the Jumas Portal unnecessarily complex			1	5	15
I thought the web site was easy to use	17	2	1	1	
I think I would need Tech Support to be able to use the Jumas Portal		1	2	2	17
I found the various functions well integrated		2	17	2	
I thought there was too much inconsistency in the Jumas Portal				7	14
I would imagine that most people would learn to use the Jumas Portal very quickly	18	3			
I found the website very cumbersome to use				2	19
I felt very confident using the web site	19	1	1		
I need to learn a lot about the Jumas Portal before I could			16	4	1

effectively use it.					
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### 9) Overall Reaction to the Jumas Portal

	0	1	2	3	4	5	6	7	8	9		NA
Terrible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Wonderful	<input type="radio"/>
Difficult	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Easy	<input type="radio"/> 17
Frustrating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Satisfying	17 <input type="radio"/>
Dull	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Stimulating	15 <input type="radio"/>
Rigid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Flexible	14 <input type="radio"/>

### 10) Web Pages

		0	1	2	3	4	5	6	7	8	9		NA
Reading characters on the page	Hard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2 <input type="radio"/>	2 <input type="radio"/>	<input type="radio"/>	1 <input type="radio"/>	<input type="radio"/>	Easy16	<input type="radio"/>
Organization of information	Confusing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5	<input type="radio"/>	Very clear 14	<input type="radio"/>
Sequence of pages	Confusing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1	1	1	<input type="radio"/>	<input type="radio"/>	Very clear 11	6

### 11) Terminology and website information

		0	1	2	3	4	5	6	7	8	9		NA
Use of terms throughout website	Inconsistent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2	5	14	Consistent	<input type="radio"/>
Terminology is intuitive	Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1	1	4	14	Always	<input type="radio"/>
Position of messages on screen	Inconsistent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1	1	13	4	2	<input type="radio"/>	Consistent	<input type="radio"/>
Website informs about its progress	Never	<input type="radio"/>	<input type="radio"/>	7	5	7	1	1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always	<input type="radio"/>
Error messages	Unhelpful	<input type="radio"/>	2	<input type="radio"/>	1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Helpful	18

### 12) Learning

		0	1	2	3	4	5	6	7	8	9		NA
Learning to use the portal	Inconsistent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2	2	17	<input type="radio"/>	Consistent	<input type="radio"/>
Performing tasks is straightforward	Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2	2	17	Always	<input type="radio"/>
Help messages on the screen	Inconsistent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	15	2	2	<input type="radio"/>	Consistent	1

### 13) Website capabilities

		0	1	2	3	4	5	6	7	8	9		NA
--	--	---	---	---	---	---	---	---	---	---	---	--	----

Speed	Too slow	<input type="radio"/>	<input type="radio"/>	1	12	3	<input type="radio"/>	1	3	1	<input type="radio"/>	Fast enough	<input type="radio"/>
Reliability	Unreliable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	19	2	<input type="radio"/>	Reliable	<input type="radio"/>
Designed for all levels of users	Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always	<input type="radio"/>

#### 14) Overall Reaction to the Jumas Portal

	Strongly Agree				Strongly Disagree
I'm satisfied with how easy is to use the Jumas Portal	<input type="radio"/> 17	4 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It was simple to use	<input type="radio"/> 17	4 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can effectively complete my work using this website	<input type="radio"/> 16	5 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to complete my work quickly	15 <input type="radio"/>	4 <input type="radio"/>	2 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to effectively complete my work	15 <input type="radio"/>	4 <input type="radio"/>	2 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel comfortable using the Jumas Portal	15 <input type="radio"/>	4 <input type="radio"/>	2 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Whenever I make a mistake using the portal, I recover easily and quickly	<input type="radio"/>	3	6	12	<input type="radio"/>
It's easy to find the information I need	15	3	3	<input type="radio"/>	<input type="radio"/>
The information provided by the website is easy to understand	15 <input type="radio"/>	4 <input type="radio"/>	2 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information is effective in helping me to complete my tasks	15 <input type="radio"/>	4 <input type="radio"/>	2 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The organization of information on the web pages is clear	15 <input type="radio"/>	4 <input type="radio"/>	2 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The web interface is pleasant	8	12	<input type="radio"/>	<input type="radio"/>	1
The portal has all the functionalities and capabilities I expect it to have	15 <input type="radio"/>	4 <input type="radio"/>	2 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I'm satisfied with this web site	<input type="radio"/> 17	4 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### 15) Keywords to describe the Jumas Portal

<input type="checkbox"/> Convenient 17	<input type="checkbox"/> Familiar	<input type="checkbox"/> Slow	<input type="checkbox"/> Friendly 11	<input type="checkbox"/> Straightforward
<input type="checkbox"/> Personal	<input type="checkbox"/> Confusing	<input type="checkbox"/> Stressful	<input type="checkbox"/> Fun	<input type="checkbox"/> Boring
<input type="checkbox"/> Innovative 19	<input type="checkbox"/> Helpful	<input type="checkbox"/> Simplistic	<input type="checkbox"/> Empowering	<input type="checkbox"/> Usable 19
<input type="checkbox"/> Old	<input type="checkbox"/> Complex 14	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Dated	<input type="checkbox"/> Advanced
<input type="checkbox"/> Meaningful	<input type="checkbox"/> Clear 14	<input type="checkbox"/> Flexible	<input type="checkbox"/> Sophisticated	<input type="checkbox"/> Effective
<input type="checkbox"/> Difficult	<input type="checkbox"/> Accessible	<input type="checkbox"/> Time saving 14	<input type="checkbox"/> Too technical	<input type="checkbox"/> Intuitive 16
<input type="checkbox"/> Organized	<input type="checkbox"/> Calm	<input type="checkbox"/> Disruptive	<input type="checkbox"/> Fast	<input type="checkbox"/> Consistent 10
<input type="checkbox"/> Controllable	<input type="checkbox"/> Annoying	<input type="checkbox"/> Easy to use	<input type="checkbox"/> Comfortable	<input type="checkbox"/> Approachable
<input type="checkbox"/> Collaborative	<input type="checkbox"/> Distracting	<input type="checkbox"/> Frustrating	<input type="checkbox"/> Attractive	<input type="checkbox"/> Efficient 9
<input type="checkbox"/> High quality	<input type="checkbox"/> Valuable	<input type="checkbox"/> Fragile	<input type="checkbox"/> Sterile	<input type="checkbox"/> Exciting
<input type="checkbox"/> Secure	<input type="checkbox"/> Predictable	<input type="checkbox"/> Intimidating	<input type="checkbox"/> Appealing	<input type="checkbox"/> Clean
<input type="checkbox"/> Understandable 16	<input type="checkbox"/> Maintenance Low	<input type="checkbox"/> Comprehensive	<input type="checkbox"/> Unconventional	<input type="checkbox"/> Effortless
<input type="checkbox"/> Customizable	<input type="checkbox"/> Time consuming	<input type="checkbox"/> Stable	<input type="checkbox"/> Unattractive	<input type="checkbox"/> Stimulating
<input type="checkbox"/> Not valuable	<input type="checkbox"/> Relevant	<input type="checkbox"/> Inconsistent	<input type="checkbox"/> Professional 16	<input type="checkbox"/> Compatible
<input type="checkbox"/> Incompressible	<input type="checkbox"/> Useful 17	<input type="checkbox"/> Not secure	<input type="checkbox"/> Trustworthy	<input type="checkbox"/> Integrated
<input type="checkbox"/> Disconnected	<input type="checkbox"/> Motivating	<input type="checkbox"/> Poor quality	<input type="checkbox"/> Impressive	<input type="checkbox"/> Hard to use
<input type="checkbox"/> Essential	<input type="checkbox"/> Creative 15	<input type="checkbox"/> Fresh	<input type="checkbox"/> Satisfying 17	<input type="checkbox"/> Exceptional

## SECTION 2: Questions about functionalities

### 16) Emotion Annotation:

	Strongly Agree				Strongly Disagree
The set of considered emotions is significant	<input type="radio"/>	<input checked="" type="radio"/> 17	4	<input type="radio"/>	<input type="radio"/>
The extracted annotations describe correctly the mood of the subject	<input type="radio"/>	17	4	<input type="radio"/>	<input type="radio"/>
The emotion annotations are easily usable/available	<input type="radio"/>	17	4	<input type="radio"/>	<input type="radio"/>
I can make use of information about the emotional state	<input type="radio"/>	<input type="radio"/>	17	17	<input type="radio"/>

### 17) Multimedia Summarization:

	Strongly Agree				Strongly Disagree
The extracted key-frames and the corresponding clips represent relevant parts of the hearing	<input type="radio"/>	<input type="radio"/>	15	4	2
The extracted key-frames are overestimated	2	15	2	2	<input type="radio"/>
The thumbnail view is satisfactory	<input type="radio"/>	<input type="radio"/>	13	7	1

### 18) Video Annotations:

	Strongly Agree				Strongly Disagree
The video annotations correspond to interesting/meaningful parts of the trial	<input type="radio"/>	13	6	2	<input type="radio"/>
The video annotations provide useful information about the participants in the trial	<input type="radio"/>	13	6	1	1
The video annotations facilitate browsing the videos	<input type="radio"/>	14	5	1	1

### 19) Automatic Speech Transcription:

- How much the immediate (at least the day after) availability of the transcription of a judicial trial is important for your daily job?  
☐ Very important 18 ☐ Important 3 ☐ don't care ☐ Not important ☐ Not important at
  
- Is a 100% accuracy of the automatic transcription necessary for your daily job or could you tolerate some transcription errors (i.e. substitution of words, insertion of words, deletion of words) without affecting the meaning of what was uttered during the trial? 100% accuracy is:  
☐ Necessary 16 ☐ Not necessary 5



- Suppose a 100% automatic transcription accuracy is possible. Do you prefer to have at disposal the exact transcription (i.e. including spontaneous phenomena, all discourses and comments by the various actors of the trial, etc) or a “not verbatim” proceeding?  
☐ Exact transcription 21 ☐ “Not verbatim” proceeding
- Suppose a 100% automatic transcription accuracy is not possible, could you give a list of “important” errors that should not be done by the automatic system? (e.g. Names of person, dates, names of localities, etc..)

Dates 13 , places 13, names 11

- Suppose a 100% automatic transcription is possible only for some of the actors of a trial (judge, prosecutor, witness, lawyer). Could you order the list of actors according to the importance of their related automatic transcription?  
☐ Lawyer  
☐ Witness  
☐ Judge  
☐ Prosecutor

All 21 respondents indicated witness as the first on the list. The second appears a judge. Other actors were placed aequally

## 20) Information Retrieval:

	Irrelevant				Relevant
The search results are typically			1	1	19

	Of little use				Very useful	I haven't tried them
The advanced search features are			1	2	3	16

## 21) Deception Detection:

	Strongly Agree				Strongly Disagree
The extracted annotations correctly describe deceptive statements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> 4	12	5 <input type="radio"/>
The extracted annotations correctly describe vague utterances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> 1	14 <input type="radio"/>	6 <input type="radio"/>
The extracted annotations correctly describe negations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> 6	11 <input type="radio"/>	4 <input type="radio"/>
I can make use of information about the deceptive indications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/> 1	<input type="radio"/> 4	16

## 22) User Generated Contents (EML)

	Strongly Agree				Strongly Disagree
Adding tags to documents helped me to find and retrieve them later On	<input type="radio"/> 19	2 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The suggested tags are appropriate annotations for the	<input type="radio"/> 17	3 <input type="radio"/>	1 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>

presented video					
Adding tags and comments is a useful means of communication about a case with colleagues.	<input type="radio"/>	13 <input type="radio"/>	4 <input type="radio"/>	4 <input type="radio"/>	<input type="radio"/>
I can make use of information about the deceptive indications	<input type="radio"/>	13 <input type="radio"/>	4 <input type="radio"/>	4 <input type="radio"/>	<input type="radio"/>

### 23) Ontological Query Expansion

	Strongly Agree				Strongly Disagree
The expanded query is able to augment the initial query	<input type="radio"/>	17	2	2	<input type="radio"/>
The query expansion functionality needs to be customized according to my preferences	17	2	2	<input type="radio"/>	<input type="radio"/>
I would like to provide a feedback/refinement after a search result obtained with the query expansion functionality	<input type="radio"/>	6	11	<input type="radio"/>	<input type="radio"/>
I must rewrite my query after a search result obtained with the query expansion functionality	2	15	2	2	<input type="radio"/>

### 4.3 Potential exploitation

Due to the change of Polish Code of Civil Procedure all hearings in Commercial Courts should be recorded and made available for judges, lawyers and other people involved to the trial. It makes a great opportunity for jumas system because it meets most of the requirements.

Esaprojekt have attended several meetings with other companies to made one common solution that can be deployed as a commercial solution.